SANDIA LAB NEWS

VOL. 19, NO. 24, DECEMBER 1, 1967

SANDIA LABORATORIES ALBUQUERQUE, NEW MEXICO LIVERMORE, CALIFORNIA OPERATED BY SANDIA CORPORATION FOR THE U. S. ATOMIC ENERGY COMMISSION

ATMOSPHERIC PHENOMENA near the arctic circle are of interest to a Sandia scientific expedition bound for Anchorage, Alaska. Among those making the trip and lined up on the loading ramp of Sandia's NC-135A specially-instrumented aircraft, are (l to r), C. E. Smith, W. L. Thomas, W. L. Bierly, C. A. Nelson, A. D. Sayers, H. F. Ward, L. D. Gillette, and P. D. Stang, all of Diagnostic Aircraft Operations Division 7255.

Sandians Studying Atmospheric Phenomena Near Arctic Circle

Fourteen Sandians left Kirtland AFB Monday aboard Sandia's and Los Alamos Scientific Laboratory's two specially-instrumented NC-135A jet aircraft to study atmospheric phenomena near the arctic circle. Two other Sandians, who will man a ground station at Wrigley in the District of Mackenzie (east of the Yukon), Canada, left on a commercial flight last week.

The planes flew to Spokane for refueling and then on to Anchorage which will be the staging area for three flights over the District of Mackenzie. Because of the nature of the scientific experiments, all flights will be at night. Next Tuesday they are scheduled to leave Anchorage for Honolulu. Following a brief layover there, they are expected to arrive here a week from today.

Threefold purpose of the scientific expedition is to study the aurora borealis (northern lights), cosmic rays (sub-atomic bits of matter that bombard the earth's atmosphere from outer space) and the twinkle phenomena (scintillating effect of stars).

Studies of the auroral spectrum will be made during the three night flights out of Anchorage while on a rectangular flight path over Tungsten, District of Mackenzie.

Cosmic ray experiments will be conducted during flights between Albuquerque, Spokane, Anchorage, Honolulu and Albuquerque.

The twinkle phenomena will be studied at various altitudes from about 1000 to 40,000 feet, especially during ascent and descent, on the different flights.

Expedition participants include the University of Alaska Geophysical Institute, Naval Ordnance Test Station, Lawrence Radiation Laboratory, LASL and Sandia.

M. M. Robertson (1122), J. E. Keith (5234) and C. C. Hudson (5590) are responsible for the Sandia experiments. C. E. Smith (7255-2) is Sandia aircraft mission coordinator.

C. A. Nelson and J. T. Wright (both 7255) will operate a radar transponder and beacon station at Wrigley to provide a navigational point for the planes.

Sandians on the LASL aircraft are W. L. Thomas, B. R. Stanton, L. C. Harris and P. D. Stang (all 7255).

Messrs. Robertson and Keith, and S. S. Markowitz, L. D. Gillette, H. F. Ward, R. C. Hewitt, A. F. Huters, W. L. Bierly, A. D. Sayers and C. E. Smith (all 7255) are on the Sandia plane.

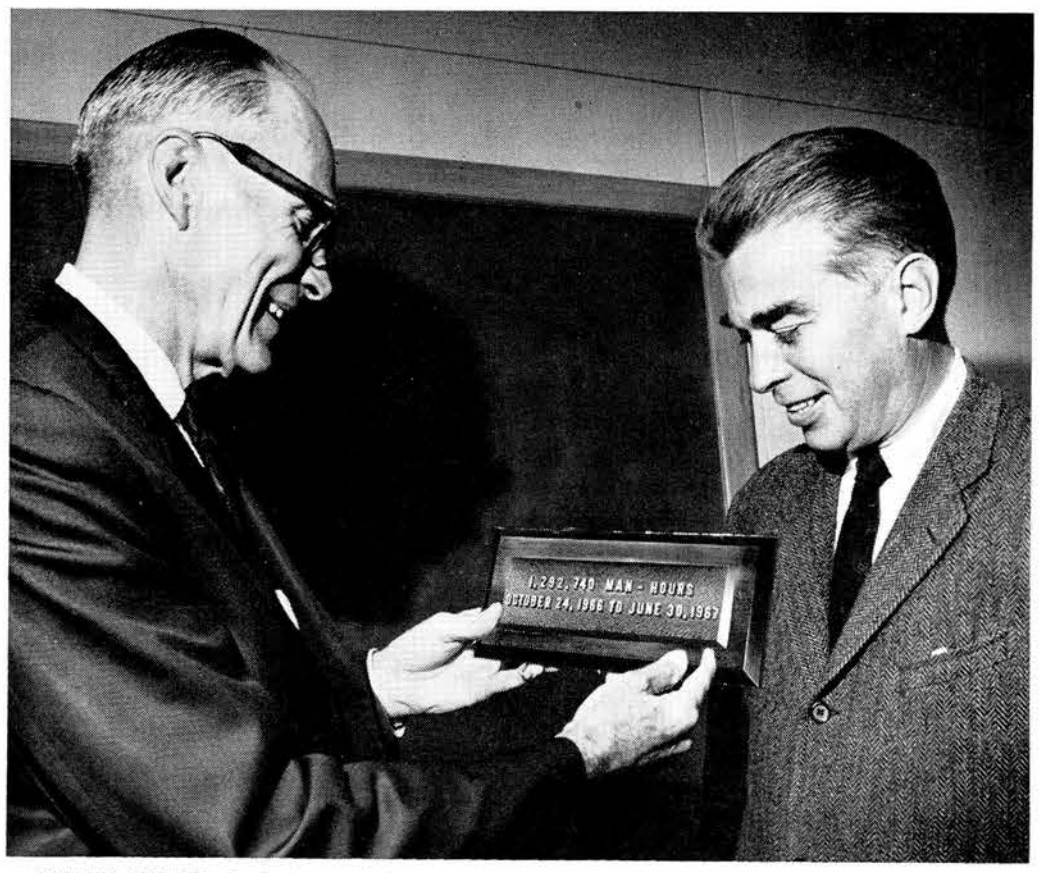
R. A. Bice Appointed

R. A. Bice, vice president 7000, will help select a recipient of the 1968 Ernest Orlando Lawrence Memorial Award. He was appointed recently to serve on the Weapons Nomination Screening Panel by L. R. Hafstad, chairman of the AEC's General Advisory Committee.

The Award, given by the AEC upon the recommendation of the General Advisory Committee and the approval of the President, recognizes especially meritorious contributions to the development, use or control of atomic energy in areas of all the sciences related to atomic energy, including medicine and engineering.

The award consists of a medal, a citation and a monetary prize. It is given to not more than five individuals in any one year, in amounts of not less than $5000 and total amount not to exceed $25,000.

Since a large number of nominations for the Award are being received, the General Advisory Board created several screening panels to recommend recipients. Mr. Bice will meet with the Weapons Nomination Screening Panel in Washington, D.C., Dec. 8.



SAFETY AWARD—B. S. Biggs (left), vice president 8000, and Sandia President Hornbeck admire an AEC Award of Merit earned by Livermore Laboratory employees who worked more than a million injury-free man hours. In the past, Livermore has received five Awards of Merit and an Award of Honor from the AEC.

Livermore Laboratory Safety Record

Earns AEC Merit Award

An outstanding safety achievement of Livermore Laboratory employees was acknowledged last week with the receipt of an AEC Award of Merit. The award recognizes 1,292,740 injury-free man hours worked by Livermore Laboratory employees during the period from Oct. 24, 1966, to June 30, 1967.

In issuing the award, R. E. Hollingsworth, AEC general manager, wrote "Sandia Corporation - Livermore has received previously five Awards of Merit and an Award of Honor. It is upon such accomplishments as these that the Atomic Energy Commission relies to maintain its leadership position in the field of safety.

"Please extend the appreciation of the Commission, as well as my personal congratulations, to all those having a part in establishing this fine safety record."

The plaque will be displayed alongside other safety awards in the lobby of Bldg. 911 at Livermore Laboratory.

Liquid Propellant Tests Aid SNAP Safety Studies

The hazards of exploding liquid propellants to isotopic generators designed for use as power sources in space vehicles are being evaluated by Sandia. This study is being done in connection with a broader joint NASA/AF/Sandia project at Edwards Air Force Base in California.

Called Project PYRO, the overall program is designed to develop reliable information for predicting damage which may be caused by the accidental explosion of liquid propellants during launch or test operations of missiles or space vehicles.

The original participating agencies were interested in using the tests to acquire data on the effects of the explosions on objects, such as launch-pad structures, located about 25 feet from the center of the explosion. Because of Sandia's interest in blast and thermal effects on Systems for Nuclear Auxiliary Power (SNAP) units either within the fireball or a few feet away, PYRO tests were revised to include close-in measurements.

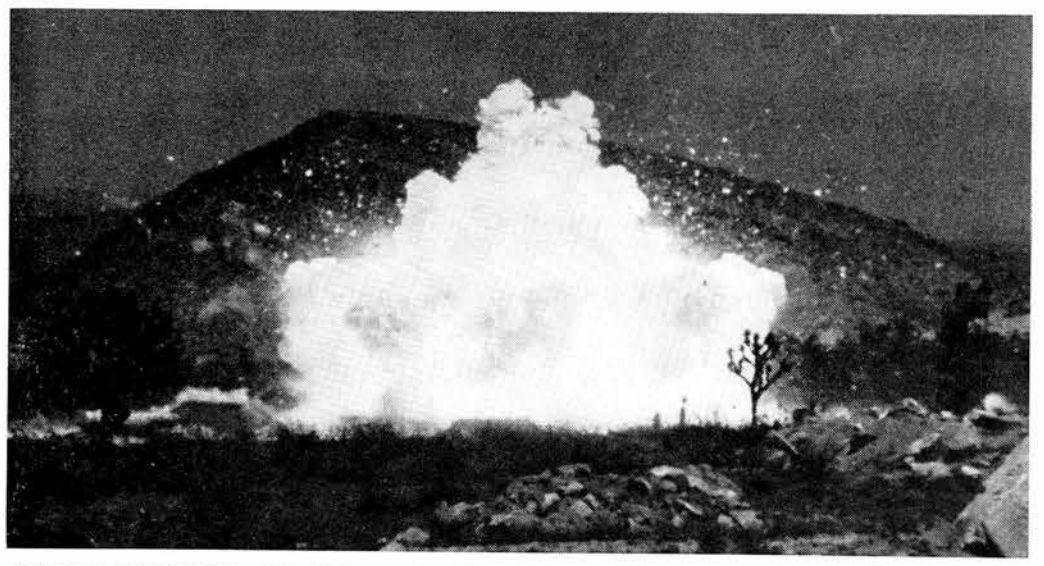
Design Analysis Division 9312 uses the tests to acquire effects data as part of Sandia's responsibility in the safety analysis of SNAP isotopic generators that must be designed to withstand all types of hazards to which they may be exposed. Fuel blocks from a SNAP-29 generator were subjected to two fireball environments; a SNAP-19 container was tested for survival; and the heat transfer of a SNAP-27 unit was checked in another test. The first two generators were provided by Martin Nuclear Division of Martin Marietta Corporation and the third by General Electric Company.

The basic Project PYRO program was designed to evaluate the explosive potentials of three liquid propellants: Lox (liquid oxygen)/liquid hydrogen, Lox/RP-1 (a grade of kerosene), and hypergolic propellants (those that ignite upon contact of the fuel with the oxidizer).

Tests involving 200, 1000 and 25,000 pounds each of the three propellants simulate a variety of possible launch-pad and abort accidents. They include drop tests to simulate loss of thrust from rocket engine failure, rocket sled impact tests to simulate missile tipover, and rupture tests on propellant containers to simulate the splitting of fuel containers on a destruct signal from a range safety-control officer. Blast pressure, thermal radiation, hot-gas temperature and calorimetry are measured during the tests.

Since May 1964, 286 tests have been conducted, including all of those involving hypergolic propellants and those with 200 and 1000 pounds of the other two propellants. Currently the last series of tests with 25,000 pounds of Lox/liquid hydrogen and Lox/RP-1 are underway.

With the exception of the rocket sled tests conducted at China Lake in 1964-65, all Project PYRO tests are done at the Air Force Rocket Propulsion Laboratory at Edwards Air Force Base.



FIREBALL CREATED by 100,000 pounds of liquid hydrogen expioding during a test simulating a failure of Centaur upper stage.

A five-member steering committee administers Project PYRO with active management furnished by the Air Force Rocket Propulsion Laboratory. Test design and analysis are performed by URS Corporation. Test reports are issued by the committee with each member serving as a reporter for his particular agency.

Frank Kite (9312) has been Sandia's representative on the committee since April 1966. Along with regular committee functions, he coordinates arrangements for the inclusion of extra experiments and the addition of instrumentation in PYRO tests. He is also responsible for all San-

(Continued on Page Two)

(Editorial)

Where Were The Others?

SEVEN MILLION UNDETECTED CASES OF DIABETES IN THE UNITED STATES — ARE YOU ONE?

Last week the American Diabetes Association conducted its 20th annual nation-wide diabetes detection drive to encourage people to seek medical assistance to determine whether they are diabetic or have diabetic tendencies. The Association estimates that there are about seven million undetected cases of diabetes in the United States.

Sandia has its own diabetes detection program. How successful has this program been to date? According to an item in the last issue of the SANDIA LAB NEWS, seven new cases have been detected among 1150 people tested. But the discouraging news is that of the employees who were sent notices only 44 percent have taken advantage of this program. If the number of people who were examined represented a true random sample of Sandia employees, then statistically we might expect to find nine cases of diabetes among the 1200 or so employees who did not respond. Statistics, however, may not be too meaningful in this area. In 1964, 17 cases of diabetes were discovered among 1000 people tested at Sandia. In 1965, seven positive and 37 potential cases were found among 3000 people tested.

The program, of course, is entirely voluntary. But since the test is simple and relatively painless, it is difficult to understand why anyone would pass up the opportunity to be tested. Some may erroneously feel that a test at this time may not be necessary because they have taken tests for diabetes in past years. Diabetes can show up at any time. An annual check is the best way to be sure that you do not have diabetes.

Untreated diabetes is very serious. In addition to other dangers, the eyes can be permanently damaged and the heart can be seriously affected.

IDEP Test Data on Semiconductor Devices Results in Cost Savings

Using data from reports supplied by the Interagency Data Exchange Program (IDEP) results in cost savings for Sandia.

Test Equipment Reliability and Engineering Design Practices Division 2442 recently checked IDEP reports for test information on semiconductors. Locating sufficient test data on five semiconductors eliminated the necessity of Sandia testing and evaluating the items before using them in the fabrication of test equipment and resulted in a cost savings of $2400.

"Savings of this type illustrate the value of IDEP to Sandia and the other 163 participants," Walt Westman (2435), Sandia IDEP data coordinator, states. "By using IDEP reports, we can shorten the test period or even eliminate the need for conducting tests at all. The exchange system provides each participating firm with the support of 163 other testing groups."

IDEP was established to avoid duplication of tests of commercially available items used in government programs. Most of the participating companies or contractors are engaged in missile, space and related programs.

Currently there are some 25,000 reports in the system, 24,000 of which are on component tests. The remainder discuss techniques, materials and processes. The reports cover 660 different categories, such as amplifiers, batteries, capacitors, semiconductors, problems of hardware in space, and radiation effects.

The retrievable information is available in the Specifications Library, Rm. 6 of Bldg. 828. General information may also be obtained by dialing 4-IDEP (4-4337). A quarterly listing of all reports is also available to all organizations.

Sandians wishing to survey the 164 IDEP contractors on a specific problem (evaluation, process, technique, etc.) may call Alex Ruff at 264-7566.

L. F. Parman, manager of Technical Libraries Department 3420, is the alternate IDEP data coordinator at Sandia. Mrs. H. H. Howe (3421) is in charge of the IDEP depository at the Laboratory. Miss L. C. Owen (3413) will assist Sandians in preparing IDEP summary report sheets for submission to the IDEP system.

Events Calendar

Dec. 1-9—Mystery comedy "Catch Me If You Can," Albuquerque Little Theatre, 224 San Pasquale SW. For reservations tel. 242-4315.

Dec. 1-3—An experimental theatrical happening, Old Town Studio, 1208 Rio Grande NW. For reservations tel. 242-4602.

Dec. 2-3—Ski swap, movies and ski fashions at the State Fairgrounds art gallery, proceeds to purchase new equipment for the Sandia Peak Ski Patrol.

Dec. 2-3—Shalako dances at Zuni Pueblo.

Dec. 3-Jan. 7—Collection of Italian Renaissance drawings, UNM Art Museum, to benefit the Committee to Rescue Italian Art.

Dec. 5—Holiday music program by Albuquerque Civic Chorus, Civic Auditorium.

Dec. 7—Albuquerque Symphony Orchestra with soprano soloist Leona Gordon, UNM Concert Hall.

Dec. 8-10, 15-17—Dylan Thomas' "Under Milk Wood," UNM Rodey Theater.

Dec. 10—Three-day pilgrimage and celebration by Tortugas Indians, Las Cruces.

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DISTINGUISHED SERVICE AWARD from the U.S. Navy is presented to L. P. Gise (left), manager of AEC Albuquerque Operations for the organization's contribution to the Navy's Fleet Ballistic Missile System. Commander Dan Piraino, representing the Navy's Special Projects Office, Washington, D.C., presented the award.

U.S. Navy Award Presented to AEC Albuquerque Operations

The U. S. Navy recently presented a distinguished service award to L. P. Gise, manager of the Atomic Energy Commission's Albuquerque Operations complex, in recognition of support given the Navy's Fleet Ballistic Missile System by the AEC's Albuquerque Operations Office. The system includes the Navy's nuclear-powered submarines armed with Polaris missiles that carry nuclear warheads.

Commander Dan Piraino, USN, representing the Director of the Navy's Special Projects Office in Washington, D. C., presented the award to Mr. Gise. The commendation is designated the "41 For Freedom" award in recognition of the commissioning last April of the USS Will Rogers (SSBN 659), the 41st Polaris missile-launching submarine and the last Polaris submarine planned.

The commendation reads: "41 For Freedom Award presented to the Albuquerque Operations Office, U. S. Atomic Energy Commission, for distinguished service in the development and deployment of the Fleet Ballistic Weapon System, 1967."

Commander Piraino also presented to Mr. Gise a letter which reads in part: "In recognition of the role played by your office in enabling the Navy to develop and deploy so capable a deterrent to nuclear war, it is my pleasure to forward to you this 41 For Freedom Award. It is my hope that you will regard this . . . not as a symbol of a task that is done, or a task continued, but rather as a measure of the Navy's confidence in your office's willingness to help meet the national need whenever this need is clear."

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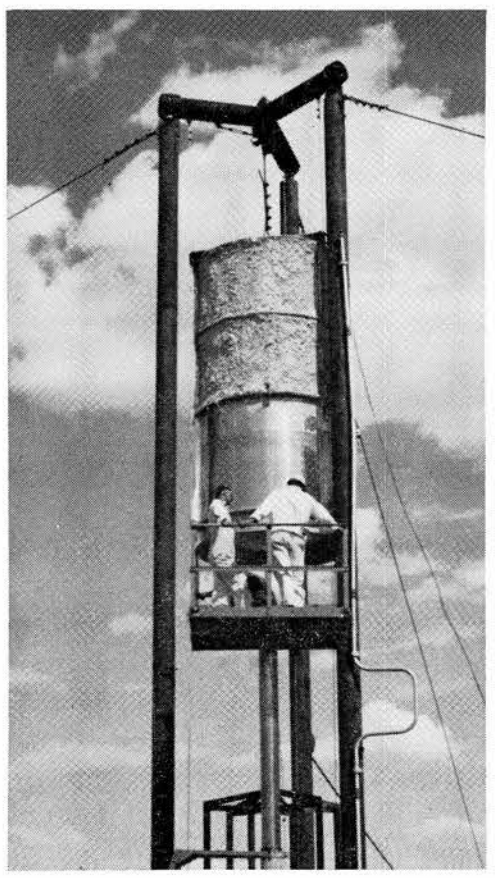
SNAP Safety Studies



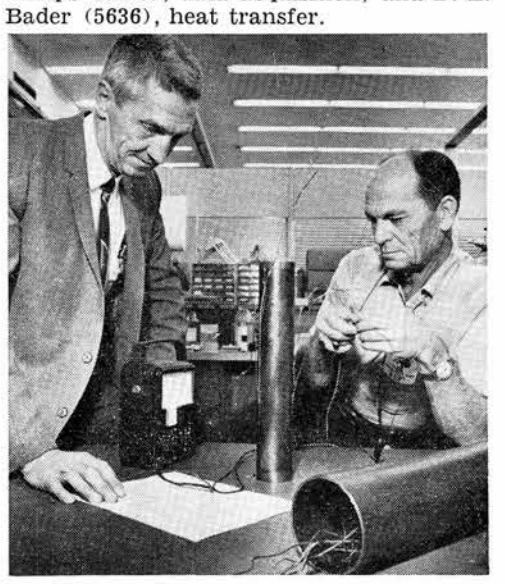
DROP TEST of 25,000 pounds of liquid oxygen and RP-1 (kerosene) is readied by range personnel at Edwards Air Force Base. Coating around upper portion of tank lowers boil-off rate of liquid oxygen. Pie-shaped cutter on stilts below the tank ruptures the containers during the drop and a small explosive charge ignites the mixture.

dia's thermal instrumentation used in the tests.

Other steering committee members are representatives of the Air Force Eastern Test Range, National Aeronautics and Space Administration's Marshall Space Flight Center and Kennedy Space Center.

Martin Nuclear Division, Army Corps of Engineers, U. S. Coast and Geodetic Survey, NASA-Houston, General Electric and Sandia have included extra experiments in the various tests.

Other Sandians who have participated in the tests and their responsibilities are D. M. Webb (1541), blast analysis; O. A. Phelps (7215), data acquisition; and B. E. Bader (5636), heat transfer.



HEAT TRANSFER SPECIMENS are checked at the Laboratory by Frank D. Kite (9312), left, and O. A. Phelps (7125). The instrument is used in Project Pyro tests to gather heat transfer data for aerospace nuclear safety program.

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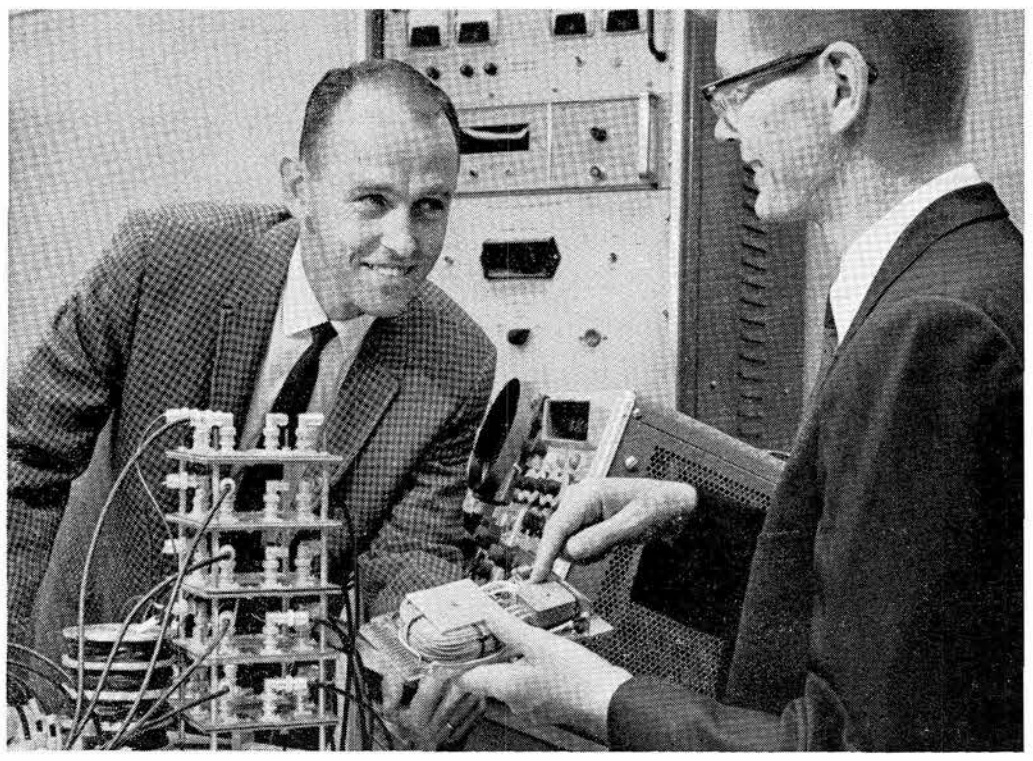


INVENTORS Elmer E. Smith (8151), left, and former Sandian Hartley J. (Nick) Jensen discuss two versions of their electronic device which measures the time interval between a number of electrical pulses to an accuracy of ± one nanosecond. The laboratory apparatus in front of Elmer can store five electrical pulses.

Compact Time Measurement Instrument Is Patented

Patent No. 3,348,141 has been assigned to the AEC in the names of Elmer E. Smith (8151) and former Sandian Hartley J. Jensen for an electronic device capable of measuring the time interval between a number of electrical pulses to an accuracy of ± one nanosecond (one thousandth of a millionth of a second). The device is more compact, electronically simpler, and less costly than any other apparatus of this type previously developed.

The circuit theory of the device is based on the ability to store pulses in a length of coaxial cable by means of tunnel diode regeneration. The time displacement of pulses stored on separate tunnel diode lines is maintained by the use of a synchronizing pulse fed to all circuits from a common source.

Thus, the time interval between many electrical signals which occur only once and may be either simultaneous or displaced in time with respect to one another can be measured accurately.

Since the original "one-shot" pulses have been converted to a repetitive signal, multiple timing data may be "read out" by monitoring each stored pulse individually (with respect to the first pulse which occurred) with a dual beam oscilloscope or a commercially available nanosecond counter.

SCLL Golf Club Names New Directors

Beryl Hefley (8232) has been named president of the board of directors of the Sandia Employees Golf Club for 1967-68. Other directors serving with him are V. K. (Gabe) Gabrielson (8114), secretary; M. E. (Moe) Houk (8161), treasurer; Bill Carter (8252); Joe Genoni (8235); Bob Siglock (8254); and Elmer Smith (8151).

At least one tournament a month, as well as a weekly twilight league during the summer months, will be scheduled again this year. Prizes will include trophies, golf balls and gift certificates.

The first tournament was played Nov. 18 at the Manteca Municipal Golf Course. Jesse Floyd (8222-2) shot a net low score of 71 to win the first place trophy. Bernie Kraemer (8121) and Beryl Hefley placed second and third with net scores of 73 and 75, respectively.

The club is open to Sandia employees and their families and LRL personnel. Dues are $1 per year. Those interested in playing may sign up with any club officer.

Welcome Newcomers

Oct. 17—Nov. 15

California
Joseph L. Thomas, Pleasanton 8235
Alabama
Thomas L. Morgan, Fairfield 8235
Transfers from Albuquerque
Elvin P. Lowe 8142
Douglas C. MacMillan 8148

Congratulations

Mr. and Mrs. Dennis Rathbun (8151), a boy, Howard James, Nov. 1.

Sympathy

To Marion Johnson (8737) for the death of her mother, Nov. 19, and her father, Nov. 20, both in Pleasanton.

To Jane McClure (8253) for the death of her father-in-law at Los Angeles and niece in Minnesota, Nov. 5.

Take Note

N. J. DeLollis of Surface Chemistry and Electrical Properties Division 1133, assisted by R. E. Gott of Materials Application Division II 8142, presented the third of a series of lecture-discussions at Livermore Laboratory on Modern Manufacturing processes. Topic for the session was "Adhesives and Bonding."

The series is designed to help SCLL engineers keep up-to-date on the properties and uses of modern materials and the capabilities and limitations of modern manufacturing processes.

* * *

Ward Mitchell of Photography Section 8233-3 spoke at an "exchange of ideas" meeting of the Industrial Photographers San Francisco Bay Area Chapter Nov. 13. Some of the ideas included a variable-height collapsible studio table for photography parts and components, modification and improvements in the use of the MP-3 Polaroid camera, use of a motion picture animation stand for slide reproduction of technical art originals, and employment of a process camera for exposing color-sensitive materials. Ward is a past president of the chapter.

* * *

Winners in the graphics and pastels category of the Livermore Art Association's 11th Annual Invitational Fall Festival of Art included two Sandians from the Technical Art Section 8233-2. Evelyn Bachman placed third for her pen and colored ink entry "Rhythm Band," and Ubbie Hammer won honorable mention for his pastel "Karen."

* * *

Registration for new and continuing students in Chabot College's late afternoon and evening courses in Livermore will be held on Wednesday, Dec. 6, 6:30-9:30 p.m. in the Multipurpose Room at Granada High School. Instruction begins the week of Jan. 2. A schedule of courses is posted on SCLL bulletin boards.

* * *

John Liebenburg (8164), racing his Lido-14, was overall winner in the Sandia Thunderbird Sailing Club's recent Flying Dutchman Junior (FJ) Trophy Race in San Francisco Bay. He scored three wins —two first places and a fifth place. Dick Sundahl (8151) won the FJ trophy by scoring third, first, and second place wins.

Other Sandia skippers participating in the event were John Anderson (8155), Glen Brandvold (8158), Charles Leonard (8131), Terry Mattson (8146), Miles Nelson (8168) and Bob Schaefer (8158).

* * *

Bob Bryant (8243-2), co-hosting a recent meeting of the Brentwood Lion's Club International, presented two Sandia films: "The Sandia Story" and "Spin-off." Bob serves as the club's secretary this year.

* * *

Remember to buy your tickets to the 1967 Sandia Christmas Dance!

The dance, open to Sandia and LRL employees and their guests, will be held Friday, Dec. 15, at the Castlewood Country Club in Pleasanton. Tickets are $4.25 per person through Dec. 11. On Dec. 12 and thereafter, the price will increase to $4.50 per person.

* * *

G. R. Otey (8158) was the co-author of a technical article, "Unsteady Discharge of a Viscous Gas from a Duct," which appeared in the September issue of the AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS JOURNAL. D. V. von Rosenberg of Tulane University was the other author.

Sandia Couple Travels Through Nine European Countries by Motorcycle

"To really see Europe, travel by motorcycle," recommends Jack Parry (8164) who recently returned from a nine-country European vacation.

"My wife and I found that our motorcycle took us where buses or trains can't go, and we were able to see and enjoy many things that are inaccessible to the ordinary tourist," he said.

"And, incidentally, it's so inexpensive," he added. "I bought a used motorcycle in Amsterdam for $244, and after covering over 3000 miles I sold it back to the same man for $190—so the transportation costs for both of us amounted to only $54 plus gas and a few miscellaneous expenses."

Jack and his wife Lee flew to Europe on a direct San Francisco to Amsterdam charter flight which dropped off the passengers and picked them up five weeks later for the return trip.

"Our itinerary just worked itself out on our arrival," said Jack. "When we walked into our first restaurant in Amsterdam, we found it filled with American tourists—even our waitress turned out to be an American Field Service student. Right then we decided that the standard, well-publicized attractions and large cities weren't for us. With no advance reservations to concern us and since both of us speak German, we figured that by acquiring a motorcycle we could get out into the rural areas and closer to the people and the customs of the countries."

After cycling across Holland and Germany, Jack and his wife flew from the East German border to Berlin where they visited several friends for about 10 days. When they returned, they planned a tour of towns with castles in Germany, Austria, Switzerland, Liechtenstein, France, Spain and Belgium.

Jack says he developed a great interest in castles when he was assigned to a Coast Guard ice breaker which stopped at several ports in Brazil and Uruguay en route from the South Pole. "I enjoyed climbing up old stone castle steps, peering out of turrets and imagining what life must have been like years ago," said Jack.

"As we followed our map, each day we would buy a bottle of wine from a local wine merchant, then drive to a little bread store for a fresh loaf of bread, and then to a cheese store for a wedge of cheese. This would tide us over until we stopped for the night, usually at a small inn," he continued.

According to Jack, many of the towns they selected hadn't been visited by Americans since the second World War. Driving from Hanover down to Cologne, they came on a little town that wasn't even on their map. Everybody was out on the streets, waving banners and displaying big floral wreaths. When they asked what was happening, the people explained that they were celebrating the one thousandth anniversary of the town. "For the first time in 200 years, they opened up the castle," said Jack. "We were shown the old armor, dungeons, etc. which outsiders usually never get to see. Later they broke out special vintage wines from the castle wine cellar.

"We often worried that we would offend people because our German might not be the best, but found that they always appreciated our making the effort to speak their language," Jack commented.

Jack and Lee found that many of the small towns were primitive compared with most of the communities in the U.S. In Germany they stayed several days in the town of Ginsweiler, 70 miles from the Rhine, where almost everyone was a relative of Lee's. The town had been wired for electricity only about 10 years ago. The roofs of the houses were thatched and the streets and walkways were cobblestoned. All of the people were farmers who still used horses and wooden hand plows.

"Both of us were most impressed with the people and their friendliness. Before making the trip I hadn't realized that from country to country people would be so different and this difference I was best able to perceive by traveling by motorcycle," Jack said.

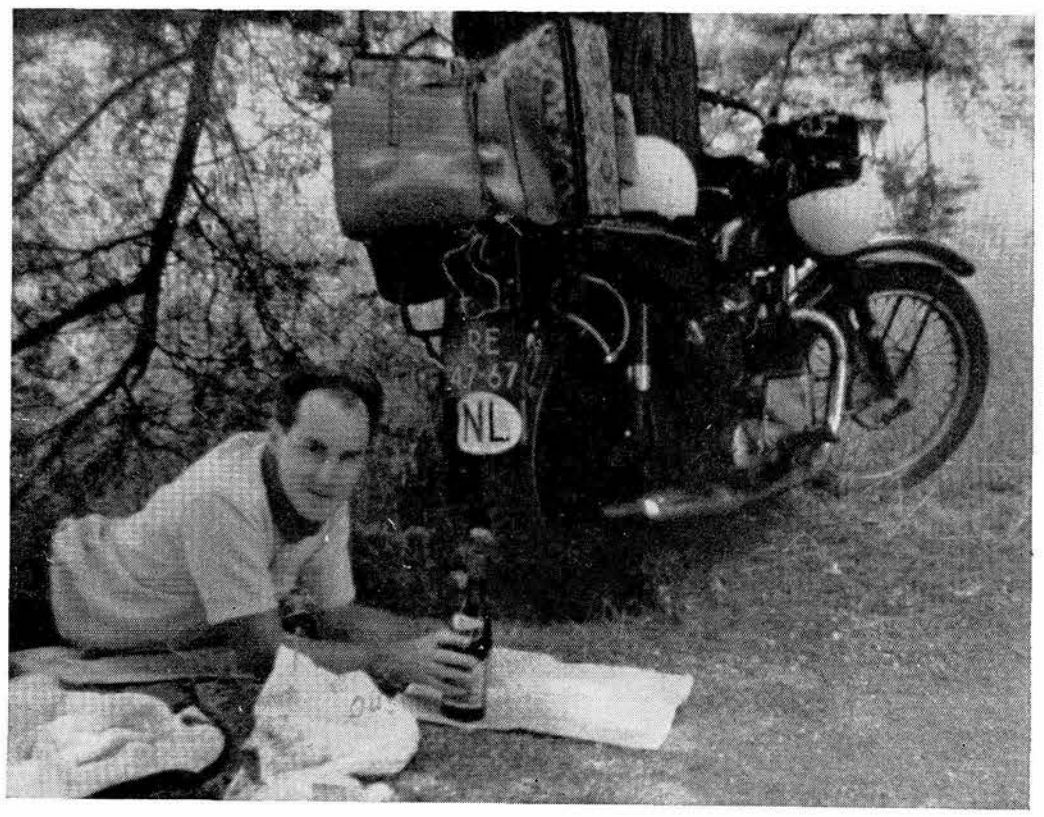
"For example, when a friend in Berlin asked me what I was, I answered that I was an engineer, and he was very impressed. But in France when I told some people that I was an engineer, they countered with 'Yes, that's how you make your l'ving, but what do you do to live?' What they meant was, didn't I sing or dance. Apparently, they're just not as interested in technology as are the Germans," he continued.

"The Spanish also seem to live for today and believe in having a good time right now. This leisurely approach to life sometimes inconveniences the traveler. We had been sending our good clothes from country to country since we didn't have room for them on the motorcycle. Each time we shipped them, they arrived in three days. But in Spain we were told that our luggage would not reach Barcelona until a month after we were on our way to the States—and it hasn't arrived yet! We've asked to have the bags forwarded and expect to see them next month perhaps."

Jack feels that these differences made the trip more interesting. "Otherwise, the trip might have been boring," he commented.

After selling the motorcycle and replacing the clothing that had been delayed, Jack and his wife flew to England for a few days in London and the surrounding countryside before their return flight from Amsterdam.

RESTING NEAR HIS MOTORCYCLE, Jack Parry (8164) enjoys a typical lunch of wine, cheese, and fresh bread during a recent trip with his wife through Europe. They are lunching along a side road as they enter the Pyrenees Mountains in Spain.



CAREFUL PREPARATIONS are made by Ed Young (1144), left, and Joe Flanagan (3465) for a flight into a remote mountainous region of Mexico next month to deliver medical supplies. Morton Slater (5262) will also pilot a plane to Sisoguichic Mission.

Sandians Flying Medical Supplies to Isolated Indian Tribe in Mexico

For the past six years, flying for fun has been a favorite pastime of Ed Young (1144) and Joe Flanagan (3465). Nowadays, however, they fly not so much for personal entertainment but primarily to help people.

After flying medical supplies to Sisoguichic Mission in a remote and mountainous area of Mexico, the Sandians were so impressed with the need for such service that they decided to organize a "missionary pilots association."

Morton Slater (5262) who accompanied Ed on one of the flights to Mexico is also active in the effort.

The three Sandians and other interested pilots are currently organizing a flight of several planes to the Mission, tentatively scheduled for Dec. 16.

Sisoguichic is the only contact point to the outside world for a tribe of Indians, the Tarmahura, who are practically isolated from modern Mexico. Only burros and airplanes can get into the rugged area.

The December flight will bring food, clothing, medical supplies, candy and presents for the children at the Mission. So far, the cost of these flights ($280) has been borne by the Sandians.

The Sandians became interested in the work of the Mission through the efforts of New Mexico's "flying priest," Father Richard Spellman. They now see the need for an organization of pilots to serve Sisoguichic and other areas of the Southwest, both in the U.S. and Mexico. In this vast, thinly populated area airplanes can deliver medical and other supplies to relieve critical situations.

The proposed missionary pilots association would be dedicated to serve people in need anywhere in the southwestern U.S. or Mexico. Anyone interested in helping with the project may contact Joe Flanagan, tel. 299-3046.

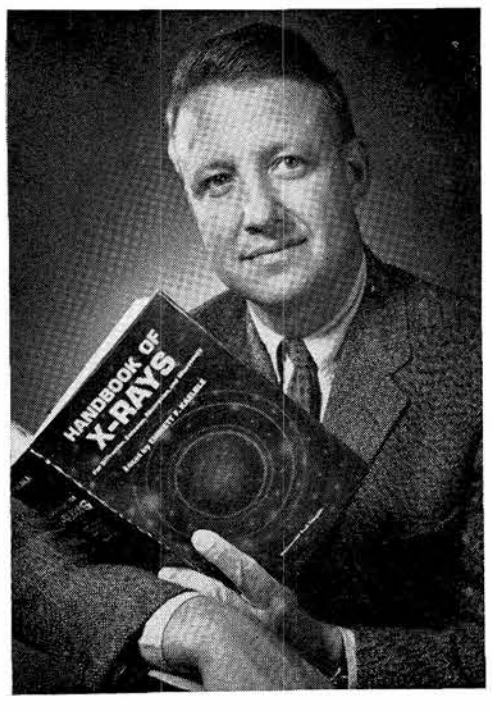
Sandian Contributes to New X-Ray Handbook

The long-awaited HANDBOOK OF X-RAYS has been published by McGraw-Hill Book Company and contains a chapter written by J. Read Holland, supervisor of Technology Studies Division 9332.

This book has been in preparation for five years and the list of contributors includes many eminent names from government laboratories, large industries, and universities. Editor of the publication is Dr. Emmett Kaelble of Monsanto Company, St. Louis, Mo.

Mr. Holland's chapter is entitled "Determination of Preferred Orientation." In it he discusses the preferential alignment of the individual crystals in crystalline solids. This preferred orientation leads to anisotropy of physical and mechanical properties, many of which are very important in engineering use. This area includes metallic and nonmetallic solids, organics (such as polyethylene), and some biological materials.

There is a discussion of the various methods of determining the preferred orientation, the advantages and disadvantages of each, and useful laboratory techniques. Mr. Holland also notes the problems encountered in the experimental techniques and data analysis.



CHAPTER in new Handbook of X-rays was contributed by J. Read Holland (9332).

John T. Williams Elected Chairman Of New Commission

John T. Williams (1623) is chairman of the newly organized Metropolitan Boundaries Commission, established by the last session of the state legislature. John was elected chairman during the recent first meeting of the new commission.

Purpose of the commission is to provide for the orderly extension of municipal boundaries, to control the formation of new local public bodies, and to minimize the overlapping of local governmental services, within Class A counties. Bernalillo presently is the only Class A county in the State.

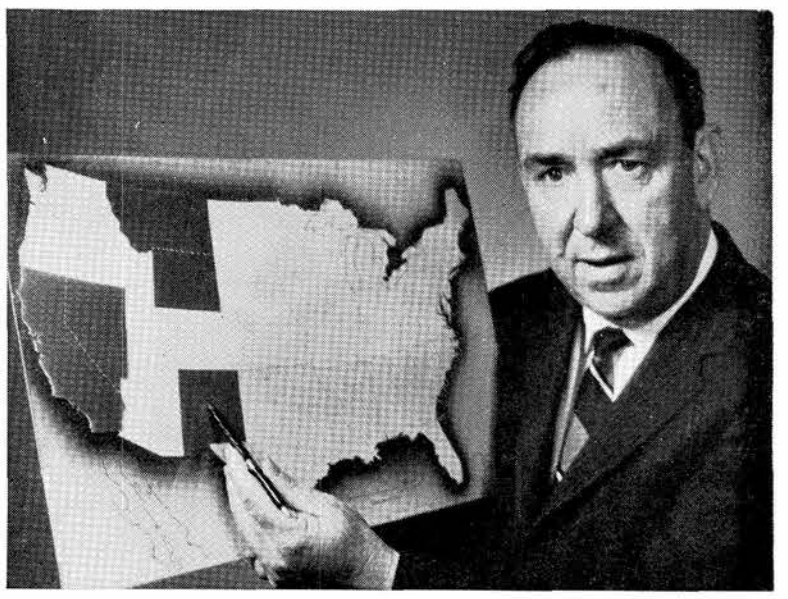
A new method for petitioning annexation is now provided to the citizens. Under the old system, a petition with the signatures of the majority of propery owners of an area proposing annexation was required. Now a single property owner may petition the Boundaries Commission.

The law which created the commission also specifies the procedure. The commission is required to hold public meetings to discuss the petition and also to evaluate the ability of a city to provide certain utility services to the area being proposed for annexation.

John has been active in the Republican party in Bernalillo County for some time. He was appointed to the Boundaries Commission to serve a five-year term by Governor David F. Cargo.

At Sandia, he is supervisor of Military Manuals Division 1623.

Local Suicide Prevention Center Is Goal of Robert A. Matthews



SUICIDE RATES in the different states are shown on the map held by Robert A. Matthews (3464). California, Nevada, Wyoming, Montana and New Mexico (shown in black) have the highest number of suicides. The southern states (shaded), with the exception of Florida, have the lowest rates.

Establishing a first-aid center for people who "cry out for someone to stop them from committing suicide" has been the goal of a small committee headed by Robert A. Matthews (3464) since February. Now they are presenting the problem to the community at large.

Work toward the formation of an Albuquerque suicide prevention center by the Social Ministry Committee of St. Paul's Lutheran Church has resulted in local government officials, medical doctors, psychiatrists, civic leaders and organizations joining the project. A steering committee will be formed shortly to develop an organization which will operate a center similar to those in other cities.

The need for a local suicide prevention center was drastically brought to Bob's attention last February when 12 Albuquerque residents took their own lives within the one-month period. Two of the 12 persons were his friends. Shortly after this flurry of suicides, the eight-member church committee scheduled a meeting to select a beneficial community project. Bob went to the meeting ". . . determined that the group should undertake a program which would help cut down the high suicide rate in Albuquerque."

High Local Suicide Rate

With an annual suicide rate of 20.4 persons for every 100,000, Albuquerque's rate is more than double the national average of 9.8 persons.

"Something has to be done about this frightening situation," Bob states. "It looks like we are well on our way toward the formation of a first-aid center for those contemplating suicide."

The local center would probably be patterned after those in other cities. Manned by at least two trained volunteers 24 hours a day, the centers have at least two telephones, one for incoming distress calls and the other for placing outgoing calls.

Many persons considering suicide actually want someone to stop them, Bob comments. Volunteers at the center comfort those who call in threatening suicide. After obtaining some basic information from the caller, trained personnel can often place the caller in an "urgency category." If it is a non-urgent case, the sympathetic listening of a volunteer at the center may be all that is necessary. However, if the caller falls within the high-urgency category, the volunteer workers solicit immediate assistance by telephoning the police, fire department rescue unit, clergyman and/or other appropriate individuals.

The Los Angeles center has an "intervention team," made up of professional and volunteer staff members. The team is dispatched immediately in response to a call from a person who is seemingly intent on taking his own life. However, Bob is initially interested in developing a first-aid type of operation.

Community Effort

After considerable research on the operation of suicide prevention centers and the suicide problem, the church committee chaired by Bob decided the program was too large an undertaking for a small group. In addition, they felt a successful center required the active participation of medical doctors, psychiatrists, law enforcement officers and a variety of civic leaders. The center's role and telephone number also has to be widely known. These factors all pointed toward a community-wide effort.

The committee sent a letter to 125 local organizations and individuals who might be interested in the suicide problem. The letter outlined the committee's aims and explained that a public meeting would be held in the near future.

The first public meeting was held recently at the University of New Mexico School of Medicine. Over 80 people attended, including representatives of the police department, local hospitals, both universities, the county coroner, several service clubs and others. Speakers on the program were Dr. Solomon Papper, chairman of the Department of Medicine; Dr. Robert Senescu, chairman of the Department of Psychiatry; and Dr. Robert Oseasohn, chairman of the Department of Epidemiology and Community Medicine, all of UNM. Those attending the meeting expressed interest in meeting again to formulate plans.

A steering committee will be formed later this month to establish an organizational structure, set up a program and suggest methods of financing a center.

To gather information about the operation of a suicide prevention center, Bob wrote to centers in eight cities. They all replied.

Bob has also compiled some statistics. He points out that Albuquerque is tied with Los Angeles for the fourth highest suicide rate in the country. It is estimated that two million people, who are still living, have attempted suicide. Of those who have attempted suicide, 69 percent are females. However, a breakdown of those who take their own lives reveals that only 30 percent are females. Bob comments that the high male suicide rate may be attributed to the fact they often use more violent methods; whereas the women generally try poison or cutting their wrists.

Underscoring the value of a suicide prevention center, Bob says the Los Angeles center has found that 37 percent of those attempting suicide expected to be saved, 20 percent left survival to chance, 14 percent didn't know and 29 percent claimed they really wanted to take their own lives.

"There are a lot of unanswered questions, but we know the centers have prevented some suicides," Bob says.

"In a sense, self destruction reflects the relationship of the individual to his community. When we establish a suicide prevention center here, those contemplating taking their own lives will at least have a place they can call for a sympathetic listener. Eventually the center may compile enough case histories to enable the proper agency, perhaps the center itself, to recognize which segment of the population can be considered potentially suicidal and then implement measures to treat those individuals."

National Drivers Test To Be Broadcast Tuesday, Dec. 5, 9 p.m.

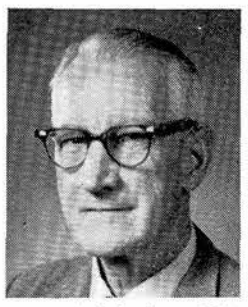
The National Drivers Test will be televised Tuesday, Dec. 5, at 9 p.m. on Channel 13. This rebroadcast is for drivers who missed the earlier program or for those who want to try for a better score.

The program presents a number of driving situations. The viewer responds the way he would normally react to the situation. He keeps a record and tallies his score at the end of the program.

Object of the program is to persuade people to drive defensively. It stimulates safe defensive driving techniques and is particularly timely considering the coming holiday traffic rush.

The test was developed from the National Safety Council's defensive driving course and includes dramatic sequences on winter driving hazards, mountain driving, school buses, motorcycles and driving distractions. Walter Cronkite moderates the program.

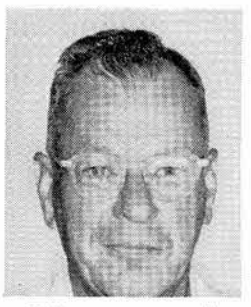
Retiring



Wilbur N. Leamon retires from the Laboratory the end of this month. He joined Sandia in March 1954, worked for a year in electronics fabrication, went on to test equipment assembly and in 1956 transferred to his present job in Military Manuals Division 1623.

Mr. and Mrs. Leamon live in Bosque Farms. "I'm very happy about retiring," Mr. Leamon says. "I'll have plenty to keep me busy—painting my house, cleaning irrigation ditches and riding and working with my horse." At one time the Leamons owned 10 horses, but now have only one, "the best of the lot." The sire of Wilbur's Tennessee Walking Horse was Grand World Champion for the years 1945-46. "I'm proud of my horse and I'm going to train him and ride him as long as I'm able," Wilbur says.

Mr. Leamon teaches Sunday School and is active in other church work, and is pleased that he will have more time for these activities. The Leamons have three children and two grandchildren. "We're going to visit relatives in Indiana," he says, "and someday, I'd like to visit my daughter and her family in Okinawa. She and her husband are in radio missionary work and broadcast Christian messages to 15 Far Eastern countries."

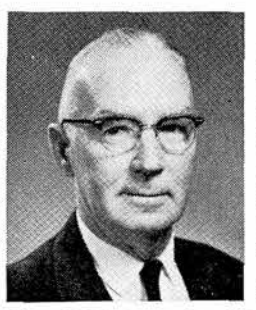


John C. Sitts of Electrical Systems Section 4511-1 is retiring Dec. 12 after more than 19 years with Sandia. He joined Sandia on Oct. 1, 1949 as an electrician and has been in Plant Maintenance Department the entire time.

John was a radioman in the Navy and moved to Albuquerque following his discharge at the end of World War II. Mr. and Mrs. Sitts have three children and four grandchildren.

Retirement plans include trips to Phoenix and Livermore to visit their children. "I'll do some work around the house and continue to do some fishing," John says. "My favorite hobby used to be leathercraft, but that is pretty exacting work and my eyesight isn't good. I guess I'll just try to keep out of trouble and enjoy retirement."

* * *



For more than 21 years, Timothy L. Regan has worked in the Support & Logistics Department. He joined Sandia as a warehouseman in October 1946. Currently, he is an order analyst in Administrative Support Section 2552-2, and will retire from Sandia on Dec. 30.

Tim enjoys all spectator-type sports and has made some retirement plans with this in mind. Since most of the major league baseball teams have their winter work-out camps in Florida, Tim will visit there during February and March and see as many teams in action as he can. This will be his first trip to Florida. He expects to drive and will visit in several cities.

Tim's daughter and granddaughter live in Albuquerque and his granddaughter spends a good deal of time with him. Following his retirement, he plans to remain in Albuquerque and continue his real estate interests.

RECENT SANDIA VISITOR—H. N. Snook (left), manager of Merrimack Valley Works of Western Electric Company and former vice president 2000, toured the development shops with R. J. Hansen (center), director of Development Shops 4200, and R. W. Henderson, vice president 2000, during a recent visit to the Laboratory. Mr. Hansen is shown explaining the function of an electric discharge electrode. Mr. Snook was a vice president at the Laboratory from January 1958 to July 1959.

Gerry Wilson Teaches Firearms Safety to Youths and Housewives

Concerned with the proper use of firearms, Gerald Q. Wilson (7332) decided to teach firearms safety to young people, housewives and hunters.

Gerry believes that hunters and sportsmen must police themselves on the proper use of firearms. This summer he enrolled in a course for instructors which is sponsored by the State Game and Fish Department. Upon completion of the course, he was certified as a qualified adult instructor and enrolled as a voluntary instructor.

His first class consisted of eight members of a local Sandia Park Boy Scout troop. His second class was made up of 16 Boy Scouts and members of a local 4-H Club.

When housewives in the area heard about the course, members of his wife's extension club asked him to conduct a special class on firearms safety in the home. About a dozen women and some of their husbands enrolled in the course.

The basic firearms safety course that Gerry teaches involves eight hours of lectures. He uses graphs, slides and other visual material to demonstrate the proper care and handling of various types of firearms and ammunition components. Students are then given a 50-question written examination.

Following the classwork, students fire on the range under Gerry's close supervision. He also requires each student to demonstrate safe methods of carrying a rifle or shotgun through a fence. Certificates are awarded upon completion of the course.

Gerry conducted two four-hour classes on the National Rifle Association's home firearms safety course for the extension club women. This course consists of instruction on the general knowledge of guns and ammunition, gun handling, and the storage and cleaning of guns in the home. It concluded with the women firing guns they brought from their own homes.

Through such efforts by sportsmen, Gerry hopes to maintain the present status of hunting and prevent it from deteriorating under numerous restrictions. He wants the young people to be able to enjoy the sport when they grow up.

Team 7300-9300 Takes Crown in Flag Football

Team 7300-9300 emerged champions of the Sandia Employees Flag Football Association after knocking off the combo team of 14-25-25-42-3100-AEC and Lovelace Clinic twice in the finals. The two teams tied for the second round crown. Team 7300-9300 was defeated 22-14 in the first game of the finals. In the second, 7300-9300 bounced back to win 28-0. This called for another game and the champs took it 14-0.

Team members include Harry Blechinger (7324), Dennis Cronin (9324), George Elkins (9312), Jim Enlow (7324), Bob Henderson (7311), Bob Horton (7324), Russ Hurlburt (9323), Bill Kampfe (7344), Dick McAvoy (7335), John Otts (7324), Bill Smith, Jr. (7342), Marlyn Sterk (7324), Art Trujillo (9322) and Bob Workhoven (7322). Joe Bradshaw (7335) is coach.

DEBURRING TOOL, designed by Gary Maltby, an electronic apprentice on military leave, is used by Daniel Bernard (4233-2) as his supervisor, J. J. Reck, looks on.

Apprentice Designs Handy Deburring Tool

Removing the burr from around a hole in some materials can be a troublesome job, especially if the unwanted ridge is on the inside surface. A Sandia electronic apprentice trainee has come up with a solution.

Gary Maltby designed the simple deburring tool while he was assigned to Section 4233-2. He is now on military leave of absence, but the tool is in continued demand.

The tool has double-faced cutting edges and a removable handle. When the burr is on the outside surface, a pushing, twisting force is applied and the front blades do the job. For an inside burr, the handle is removed and the shaft of the tool is inserted into the hole from the underside. The handle is then replaced; and when a pulling, twisting action is applied, the back blades do the task.

"The men especially like the handle," says J. J. Reck, 4233-2 supervisor. "With most cutting tools of this type, you have to wrap tape or rags around the shaft in order to get a firm hold on the tool."

The original Maltby deburring tool was of hardened steel and had a ¾-inch diameter, but requests have been received from within the Laboratory for both larger and smaller models. Samples were made by machine apprentices in Section 4254-2.

Authors

L. W. Davison (5261), "Linear Theory of Mechanical Equilibrium of Liquid Crystals of Nematic Type," November issue, PHYSICS OF FLUIDS.

M. E. Daniel (2442), "Development of Mathematical Models of Semiconductor Devices for Computer-Aided Circuit Analysis," November issue, PROCEEDINGS OF THE IEEE.

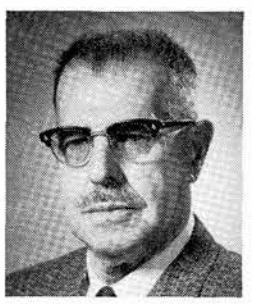
D. R. Deatherage (2451), "Electronic Bailing Circuit," August issue, ELECTRONIC DESIGN.

P. M. Beeson (5213), "Simultaneous Ruby and Neodymium Laser Pulses," December issue, REVIEW OF SCIENTIFIC INSTRUMENTS.

E. M. Bauer (2522), "Product Reliability Through Uniform Environmental Test Methods," December issue, JOURNAL OF ENVIRONMENTAL SCIENCES.

P. B. Bailey (5261), "An Eigenvalue Theorem for Nonlinear Second Order Differential Equations," forthcoming issue, JOURNAL OF MATHEMATICAL ANALYSIS AND APPLICATIONS.

Death

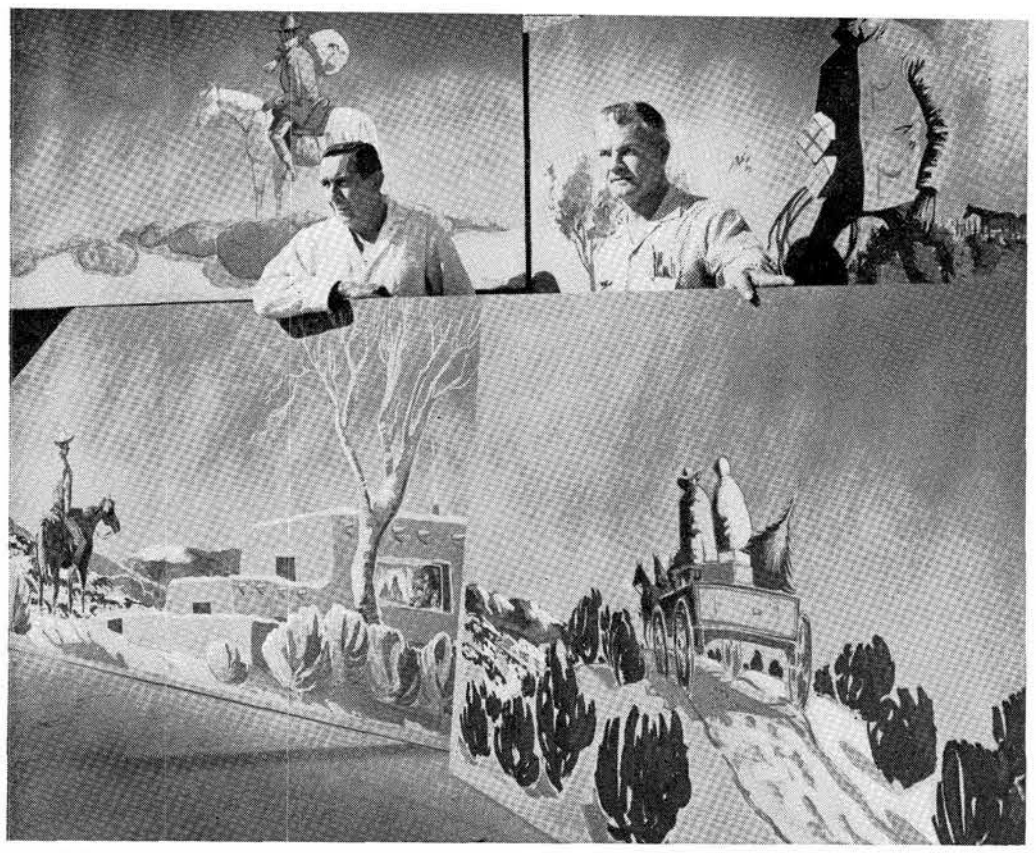


David B. Miller, a retired Sandia employee, died Nov. 18 in Albuquerque after an illness. He was 68.

He retired from Sandia in June 1964 after working 16 years as a technical staff member in the Materiel Managment organization 4600.

Survivors include his widow, one son, two daughters and nine grandchildren. His son-in-law, Bob Isidore, works in Division 2125.

SQUEEZING OFF SHOTS on a private rifle range under the guidance of Gerry Wilson (7332) are members of the Sandia Park extension club. The home firearms safety students are (l to r) Gerry's wife, Peggy; Mrs. John Harner; Mrs. Robert A. Caroline; Mrs. David. W. Berst.



GIANT CHRISTMAS CARDS which will greet Sandians at Tech Area gates during the holiday season are displayed by Felix Padilla (4516-2), left, and Ken Stiver (4513-3). Felix did the art. Ken sprayed the backgrounds and lettered greetings.

Giant Christmas Cards

New Paintings of New Mexico Yule Scenes Will Greet Sandians at Gates

At the gates of Area I during the past three years, giant Christmas cards have proclaimed seasons greetings to employees. The cards, painted panels measuring four feet by eight feet, are the work of Felix Padilla (4516-2) who created the original paintings and Ken Stiver (4513-3) who sprayed the background colors and did the lettering.

The two Sandians have just completed 12 new pictures so that the gates of Areas II and III can be included in the holiday display.

The new pictures depict New Mexico scenes at Christmas time—adobe villages, Indian pueblos, cowboys and corrals. A deep religious feeling pervades the paintings, and the New Mexico landscape glows in the reflected starlight.

Each painting was produced in a work day—a testimonial to the skill of Felix's brush. The brushstrokes are big and rendered with a spontaneous feeling. Colors flow into colors rapidly. The figures are strongly portrayed.

Felix says that creating the ideas for the paintings was the difficult part of the task. Each is original, and drawn without reference of photographs or other drawings. Felix first prepared a pencil sketch on a drawing pad and then transferred the composition to the large panels.

The artist works much more slowly on the oil paintings he creates during the year at home. These reflect a more studied style and the detail work is much more complicated. Still, the spontaneous brushwork is the distinguishing feature of Felix's art.

This kind of skill is developed through years of practice. Felix started when he was a boy. He can't remember a time when he wasn't sketching and painting.

He displayed one of his paintings at the New Mexico State Fair back in 1940, and his paintings have been selected for exhibit regularly since that time.

He produces about one painting a month in addition to teaching a class and providing private lessons to beginning artists.

His own art training consists of one year at Woodbury College in Los Angeles and a few sessions of instruction from artists in Paris where he was assigned during a period of World War II.

Through the years he has studied and worked continually to perfect his technique. He likes all media from pen and ink to acrylics.

The Christmas panels for Sandia were a challenge—one of the reasons he worked so rapidly was that he used signpainter's "bulletin" enamel which dries quickly.

Felix likes challenges. "To grow as an artist," he says, "means you have to experiment continually and work on more and more difficult tasks. You are your own taskmaster and sometimes I get disgusted with myself because I am so hard to please."

Flu Expected This Winter

By S. P. Bliss, M.D.
Sandia Medical Director

Since indications are that influenza might be back with us this winter, now might be a good time to review current medical thinking regarding the "flu." Medical researchers now know for sure that the flu is a viral infection rather than a bacterial one as had once been thought. Unfortunately, this means that the flu, along with the vast majority of viruses, is not at all susceptible to antibiotics.

What helps us combat flu effectively is our natural resistance to disease plus immunity to flu. However, no one is naturally immune to the flu unless he's recently had it—and even then the immunity is almost completely gone after just one year.

The only other way to build up our immunity to influenza is through vaccination.

All About Vaccines

Some virus vaccines, such as the current popular measles shots being given to children, confer life-long immunity. Flu vaccine is not in this category. For one thing, the immunity itself doesn't last too long; for another the influenza virus has the unique ability to change itself, thus rendering prior immunity useless.

In the 25 years since the introduction of the activated-virus influenza vaccine, there have been two major internal changes in the A-type virus alone: by 1947, the original A strain had so altered that it became the A-1, a new strain to which no one had immunity. This happened again in 1957 when the A-2 strain hit—the infamous "Asian Flu" epidemic.

The other major flu virus, the B-type, is not expected to be prevalent this year.

Influenza does not generally occur in a geographic area annually; rather, it tends to hit in peaks every three to five years, then subsides for a similar period before striking again. The past few years, as the U. S. Surgeon General had predicted, have been quiet on the flu front. This year, however, the prediction is for a flu year, although no one is able to predict how widespread the infection will be .

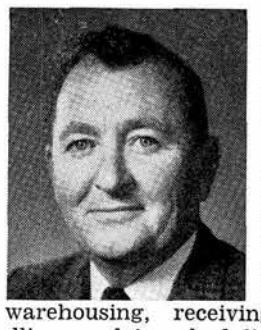
In previous years, a combination flu vaccine containing types A, A-1, A-2 and B strains was used. Since there's almost no A or A-1 virus around this year, the new vaccine contains only A-2 and B strains and will therefore offer greater protection against the Asian virus.

Proper Dosages

Anyone who has received the usual flu vaccine since 1963 does have some residual protection and needs only one shot to build up immunity. All others, however, require two shots, two months apart, to achieve immunity.

Doctors often recommend immunization for persons over 45 and for those with chronic diseases of the lungs or heart or who have such conditions as diabetes.

Supervisory Appointments



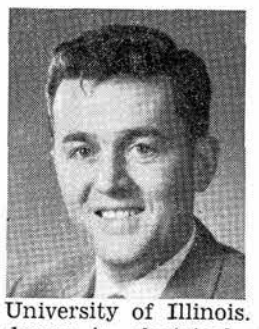
RAY J. BEALL to supervisor of Stock Control Section 4613-1, effective Dec. 1.

Ray joined Sandia in May 1948 after graduation from Albuquerque High School. He has performed various assignments in warehousing, receiving, explosives handling, and in scheduling for the Development Shops.

For the past couple of years he has worked in stock control.

He has completed a correspondence course in industrial management from La-Salle Institute.

* * *



JAMES B. GERARDO to supervisor of Plasmas Research Division 5122, effective Nov. 16.

Jim joined Sandia in September 1965 after working two years on the teaching and research staff of the University of Illinois. He earned his PhD degree in electrical engineering there in 1964, his master's degree in 1960, and his BS in 1959.

He has been engaged in plasmas research since joining Sandia.

He is a member of the American Physical Society.

Nuclear Science Abstracts Index Now Available

Copies of a new Oak Ridge publication, entitled "Index to Nuclear Science Abstracts," have been received by Sandia's Technical Library.

The five-year cumulative index is a guide to the Oak Ridge publication, NUCLEAR SCIENCE ABSTRACTS, and represents a key to the source of 55 percent of existing literature on nuclear science and technology.

Copies are available in the main technical library, Bldg. 804, and also in the Aerospace Nuclear Safety Information Center in Bldg. 892.

Sandia Speakers

J. G. Eberhart (1123), "Wetting and Surface Tension Phenomena in Refractory Materials," Oklahoma State University, Nov. 21, Stillwater, Okla.

R. T. Dillon (5590), "The Civil Air Patrol Cadet Program," Optimist Club of Northeast Albuquerque, Dec. 7.

C. W. Harrison, Jr., (1425), "On the Radar Cross Section of a Stratified Sphere" and "On the Complete Electromagnetic Field in the Vicinity of a Cylindrical Transmitting Antenna," California Institute of Technology, Nov. 28, Pasadena, Calif., and New Mexico State University, Dec. 19, University Park, N.M.

O. E. Jones (5133), "Dynamic Response of Metals to Shock Loading," University of Texas Engineering Lecture Series, Nov. 15, Austin.

R. D. Day, W. N. Dehon, D. L. Hughes (all 3130) and George Skinner (3465), "Use and Effectiveness of Visual Aids in Engineering Education," University of New Mexico meeting of local ASEE, Nov. 16, Albuquerque.

J. M. Peek (5121), "Scattering Theory of Molecular Systems," University of New Mexico Department of Physics and Astronomy Colloquium, Nov. 2, Albuquerque.

D. C. Wallace (5155), "Anharmonic Properties of Real Materials," University of Illinois Solid State Seminar, Nov. 3, Champaign.

G. L. Brown (5253), "The Inverse Reflection Problem for Electric Waves on Non-Uniform Transmission Lines," University of Arizona Mathematics Colloquium, Nov. 9, Tucson.

R. C. Wayne (5132), "Pressure Dependence of the Curie Temperature of Gamma Iron Palladium Alloys for 29.3235 Atomic Percent," American Physical Society meeting, Nov. 16-18, New York City.

R. L. Park (5123), "The Characterization of Crystal Surfaces by Low-Energy Electron Diffraction," Wayne State University Physics Department, Nov. 17, Detroit.

L. C. Walters (5154), "Preferred Orientation in Pressed Disks of KC1," X-Ray Analysis Workshop, Oct. 27, Salt Lake City.

J. R. NiCastro (5142), "Similitude in Shock Initiated Flux Compression," American Physical Society Division of Plasma Physics, Nov. 8-11, Austin, Texas.

G. A. Shelton, Jr. (5122), "A Study of Electron Fluid-Dynamical Waves," American Physical Society Division of Plasma Physics, Nov. 8-11, Austin, Texas.

J. A. Reuscher (5223), "Dynamic Mechanical Measurements on the Aberdeen Pulsed Reactor," American Nuclear Society winter meeting, Nov. 5-9, Chicago.

D. R. MacKenzie (9322), "A Digital Pitching Sector Control System for the Sandia 18-Inch Hypersonic Wind Tunnel," 28th Supersonic Tunnel Association meeting, Oct. 30-Nov. 1, Denver.

H. D. Sivinski (2570), "Laminar Flow Clean Room Technology," American Academy of Pediatrics, Committee on Fetus and Newborn, Oct. 21, Washington, D.C.

L. S. Nelson (5234), "Differences Between the Combustion of Aluminum Droplets in Air and in an Oxygen-Argon Mixture," 1967 Fall Meeting, Western States Section/The Combustion Institute, Oct. 30-31, Seattle. (Presented by Jack Prentice, Naval Weapons Center, China Lake, Calif.)

T. B. Cook (5000), "Big Picture and Little Picture Views of Nuclear Weapons," Southwestern Wholesale Distributors Association, Oct. 30, Scottsdale, Ariz.

H. H. Patterson (9230), "A Civilian Look at Viet Nam and the Far East," Sunport Optimist Club, Nov. 1; "The Challenge of Viet Nam," South Valley Optimist Club, Nov. 15.

C. S. Johnson (7252), "A Look at Science and Religion Today," Albuquerque T-VI, Nov. 3.

J. P. Grillo (3311), "Poisons in Industry," South Valley Optimist Club, Nov. 8.

D. M. Fenstermacher (7224), "Popular Astronomy," Sunport Optimist Club, Nov. 8.

G. H. Miller (5235), "Atomic and Molecular Beam Research," Utah State University Physics Department Seminar, Nov. 8, Logan.

Albert Goodman (5637), "Some Things That the Future May Bring," North Albuquerque Lions Club, Nov. 8, and Albuquerque T-VI, Nov. 17.

R. M. Jefferson (5224), "The Use of Nuclear Energy," Albuquerque Science Teachers Association, Nov. 15.

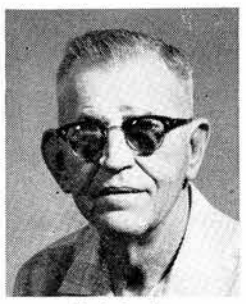
W. W. Allison (3351), "The High Potential Hazards and Loss Control Method," AEC Safety Conference, Sept. 19, Argonne National Laboratory, and National Safety Conference, Oct. 25, Chicago.

N. F. Sinnott (7214), "Space, Rockets and the Planets," Collett Park grade school, Oct. 30, Albuquerque.

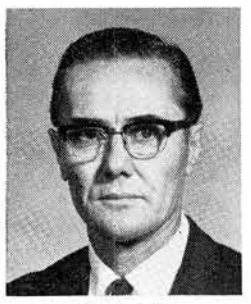
N. J. DeLollis (1133), "Preparation of Metallic Surfaces," Workshop on Engineering with Adhesives, Saul Gordon Associates Center for Professional Advancement, Nov. 14, Hopatcong, N.J.

Service Awards

20 Years

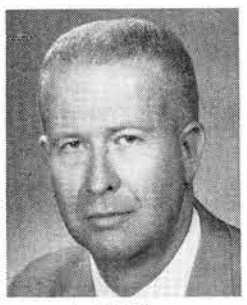


W. M. Bacchus
1415

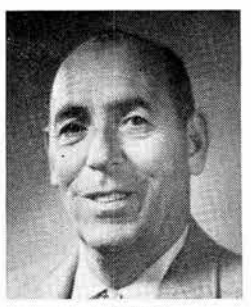


Felix Hendren
4224

H. J. Montoya
4211



L. J. Paddison
2400



B. S. Snow
7133

Claudine Sproul
3428

15 Years

M. Hazel Bailey
3126

J. H. Brengle
8119

Eugene Chavez
7332

J. M. Costales
4615

D. A. Doherty
4221

Vi Foderaro
3111

J. D. Fulmer
4514

Pauline Loomis
3321

F. M. McIver, Jr.
5211

E. J. Meyer
9323

F. W. Millikin
1515

R. O. Murdoch
1321

R. S. Neiman
8128

A. Millie Oberle
3462

W. B. Pafford
7212

Donnie Papineau
4363

Gilbert Ramirez
4153

H. J. Schroer
4213

A. L. Thornton
2542

10 Years

Dec. 1-14

Marylee H. Adams 3126, C. W. Quillen 2433, Edward Coca 4631, J. R. Shepard 4363, S. J. Armijo 4574, Ruth C. Flanagan 8210, Clark Calder 8254, R. C. Cranfill 9319, R. E. Martinell 8135.

Sandy Jewett (4333)

Take A Memo, Please

Take special care during the coming holiday season: drive defensively, walk with caution on slippery surfaces, trim your tree with non-flamable decorations, and select toys with safety in mind.

New Noon Speaking Group Meeting in Bldg. 887

An amateur speakers group, organized to serve the south side of Tech Area I, is now meeting Wednesdays during the noon hour in Rm. 105 in Bldg. 887. John Garcia (4517), one of the organizers of the new group, says it is an offshoot of the Free Lance Orators who now meet Wednesdays during the noon hour in Bldg. 818. John says the purpose of the group is to give anyone interested in speaking skills a chance to practice and improve. Each meeting features a prepared talk and a discussion period. Everyone is invited to participate.

Sympathy

To R. L. Lachance (1112) for the death of his father in Leominster, Mass., Nov. 14.

To C. E. Dahl (2561) for the death of his daughter and grandson in California, Nov. 11.

Take Note

Raymond Garcia (3462), along with other Sandians, is proudly displaying a medallion commemorating the recent signing of the Chamizal agreement between the United States and Mexico. Ray attended the Chamizal ceremonies and the conference on Mexican-American Affairs as a member of the New Mexico House of Representatives. He received the medallion and a letter from President Johnson which said in part:

"Because I share the deep hopes of the Mexican-American community for a better future, I thought you might like to have from me a little remembrance—this special medallion marking the Chamizal agreement.

"May it serve to remind us all that equality, justice and opportunity are the goals of your government."

Other Sandians who attended the conference include R. B. Powell (3000), D. S. Tarbox (3200), W. G. Funk (3250), J. R. Garcia (3230), F. A. Leckman (3252), J. A. Chacon (9426), Lorella Salazar (3111) and M. G. Chavez (4151-1).

* * *

The dozen Sandians who serve on the volunteer Sandia Peak Ski Patrol will be on hand to give advice regarding equipment when the patrol's first annual ski swap is held this week-end.

New and used ski equipment and clothing to be sold will be accepted at the State Fair Grounds Art Gallery through 9 p.m. tonight. Official hours for the sale are 9 a.m.-9 p.m. tomorrow, and 9 a.m.-5 p.m. Sunday. There will be prizes, movies and fashion shows. Any profit will be used to purchase rescue equipment.

* * *

Hunter-writer Dennis Krenz (9331) has scored again. The November-December issue of NEW MEXICO WILDLIFE carried his article "Bosque Geese," which discusses the controlled shoot of Canadian geese in the valley area south of Albuquerque. The shoot this year is Nov. 18-Dec. 31. Dennis previously wrote an article on crow hunting for the same magazine.

* * *

William F. Carstens (3410) was recently elected president of the Corrales Adobe Theater to succeed J. Frederick Laval (3465-1). This is Bill's fifth season with the community theater.

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CLASSIFIED ADVERTISING

Deadline: Friday noon prior to week of publication unless changed by holiday. A maximum of 125 ads will be accepted for each issue.

RULES

1. **Limit: 20 words**
2. **One ad per issue per person**
3. **Must be submitted in writing**
4. **Use home telephone numbers**
5. **For Sandia Corporation and AEC employees only**
6. **No commercial ads, please**
7. **Include name and organization**
8. **Housing listed here for rent or sale is available for occupancy without regard to race, creed, color, or national origin.**

FOR SALE

CARS & TRUCKS

'59 RENAULT w/'62 engine, 4-dr., $150. Vallejos, 243-3684 after 5:30.

'58 FORD station wagon, Country Sedan, AT, PS, R&H, $215 cash. Baldonado, 242-8792.

'65 CADILLAC, Calais 4-dr., desert gold, factory air, radio, PS, PB, P windows & antenna, $2995. Feistamel, 298-6170 after 6.

'61 FORD Ranchwagon, R&H, ST, AC, original owner, 4 new tires, $490. Monson, 298-7969.

'56 PLYMOUTH, hydromatic trans., $165. Benjamin, 247-8217.

'53 CADILLAC convertible w/wire wheels, completely rebuilt within 20,000 miles, $425, Reed, 299-7425.

'66 FORD wagon, 8 pass., country sedan, PS, PB, factory air, 23,000 miles, $2450. Morgan, 299-2859.

'60 CHEVROLET Biscayne sedan, 6-cyl., standard, R&H, economical, $385. Chaves, 255-6155 after 6.

'67 RAMBLER Rebel 770, 6-cyl., AT, 3000 miles, below Blue Book. Isidoro, 877-4440.

'49 PLYMOUTH 4-dr. sedan. Coonce, 296-1089.

'61 FORD Galaxie, PB, PS, 390 engine, 4-dr. sedan, $450. Messer, 298-8292.

'60 ANGLIA, 25 mpg. Rose, 298-6238.

'59 METROPOLITAN, hardtop, blue and white. Dickason, 299-8125.

'63 PONTIAC Catalina, 4-dr., HT, AT, AC, PS, new tires, battery, $1400 or best offer. Crawford, 256-2303.

REAL ESTATE

CABIN SITE at Navajo Lake, terms to suit, $200 down. Finnell, 299-0619.

INVESTMENT property in the Sandia Mountains. Terms. Hoagland, 282-3825.

3-BDR. HOUSE, SE Heights, corner lot, den, w/w carpeting, many other extras. $750 down, new FHA mortgage. Hawley, 255-0332.

2-BDR. HOME, Northwest Heights, pitched roof, single attached garage, 6-ft. walled yard, central heat, $11,500. Amador, 855-4808.

MANKIN, 3-bdr., 1¾ bath, carpeting and drapes, landscaped, private backyard, covered patio. Love, 299-0956.

MISCELLANEOUS

12-VOLT car cooler, $5; Dumont TV, $25; maple finish hutch, $40. Messer, 298-8292 after 5:30.

35MM SLR CAMERA: Konica model FM w/CDS light meter & 52MM f1.4 lens, new $249, now, $169. Anastasio, 299-7012.

6' EARLY AMERICAN studio couch, green tweed. Williams, 298-2671.

CUSTOM TWIN SIZE innerspring mattress & matching box springs; child's metal desk; 5-gal. aquarium, complete; pup tent & dacron sleeping bags. Burger, 299-8626.

SKI equipment, Northland combination 6'6", Garmish boots, size 8, poles, boot tree, all for $40. Sandlin, 299-8786.

GROLIER teaching machine, $15; natural birch bypass closet doors, framing & track, 36"x78½", $10. Selph, 299-6833.

TENT, 11½ x 11½ x 7½, nylon, outside frame, screened & zipper closed windows & door, floor, $100. Milner, 299-7155.

SKIS, including binding & poles, for child, red & white, 63" long, wood, metal edges & tips, $7. Sims, 255-6967.

BEDROOM SUITE, dbl. bed, 2 matching chests & night stand; console radio-record player; floor lamp. Bishop, 299-0649.

AUTOMATIC WASHER, Westinghouse, $25. Ashworth, 296-2855.

LAVATORY, white, w/faucets, $5; medicine cabinet w/mirror and shelves, 20"x14" wall opening, $5. Miller, 268-5992.

OAK swivel office desk chair. Wilson, 282-3225.

BICYCLE, girl's 20", thornproof tubes, training wheels, $15. Hayes, 299-1200.

MOTORCYCLE, '65 Yamaha, 250cc, $395 cash. Duvall, 299-8744.

TYPEWRITER, portable, $45. Campbell, 296-3718.

21" RCA TV, walnut cabinet, recently repaired, $50 or trade. Morgan, 256-7994.

4 INCH angle iron, 30' long, 9" channels, 17.5' long, 5c per pound. Houghton, 299-3386.

TENT, 16'x10', $40; Simms collapsible wood burning camp stove, $10; pack saddle, $20. Gubbels, 299-8089.

'65 HONDA 50, $100. Williams, 296-2412.

CLARINET, B flat, Grenatex wood w/case; white, table model Motorola radio. Walter, 256-1534 after 5.

FUR COAT, 7/8 length, Russian squirrel, $45; Relax-a-cizor, $50. Pyetzki, 298-5039.

'65 RIVERSIDE 12' camp trailer, sleeps 6, 2-burner range, ice box, $450 or trade for car of equivalent value, Parsont, 299-1621.

BICYCLE, boy's 24" wheels, lg. carrying basket, thorn resistant tubes, $10. Roh, 299-3749.

NEW BUMPER carrier racks for motorcycle, cost $27, sell for $18. Hiltunen, 6500 Cochiti Rd. SE.

SECRETARIAL CHAIR, $4; lab stool, $4; Harpers Ferry musket, $80; barca lounger, $95; transformers, electr. pts., make offer. Welker, 299-1179.

2 MATCHING swivel rockers, turquoise, $25 ea. or $45 pr.; studio couch, turquoise, makes dbl. or twin beds, $50. Smith, 299-1264.

NORGE washing machine, needs repair, $15. Fitzmorris, 256-2785.

BOOKCASE headboard bunk beds, guard rail, storage drawer, light walnut finish, mattress incl.; Columbia record player, $10. Taggart, 268-0963.

RCA 21" B&W TV, metal cabinet, w/rolling stand, $30. Kostedt, 255-7970.

AKC registered German Shepherd puppies, excellent bloodlines. Riley, 636-2154 (Bosque Farms) after 6.

TWO SLEDS, each 39" long, $3.50 ea. or both for $6. Ryan, 299-3318.

BOAT, fiberglass 16', 80 hp Mercury, completely equipped, all extras for skiing, motor guaranteed, $1395. Schowers, 911 Chama NE, 255-9279.

DUPLEX BED, makes into 2 twin beds, steel frame, 2 innerspring mattresses, $50. Koletar, 255-4751.

ELECTRIC RANGE, Ward's deluxe model, originally $300, sell for $175, used 9 mos. apt. size refrigerator, $80. Cover, 268-0921.

KENMORE dishwasher; mahogany end table; overstuffed chair; Scott multiplex adapter; Scott 210F preamp-amp, Cynaco PAS-2 preamps. Hesse, 265-0406.

BLOND baby chifforobe, 3 drawers and a place for hanging clothes, $30. Greenwood, 298-5268.

FOLDA-ROLA folding stroller, $5; folding car bed w/pad, $2; car seat, $1. Daut, 255-2529.

PADLOCK SET, six each master No. 3, all keyed alike, w/8 keys. Any key fits all locks. Illing, 298-7189.

WINCHESTER new 30-30 rifle Canadian Centennial model, gold engraved, factory boxed. Trade for old hunting or bowie knives. Smitha, 299-1096.

TRAVEL QUEEN camper, 8', heater, sliding windows into cab; adding machine, $8. Windham, 256-9455.

GERBILS, male, 6 weeks old, delightful, fun-loving, friendly pets, $3.50 each. Dyckes, 299-7280

15 GAL. aquarium on stand, $30; 5 gal., $13; both complete w/bottom filters, heaters, and some fish. Corll, 255-5683.

MAPLE BED, double size, firm mattress, box spring, $50. Rynders, 299-3894.

POOL TABLE, Brinktun, 8 x 4'; Lionel train, super "O" track. Jarvis, 255-1488.

BICYCLE, girl's 24", $15. Blossom, 299-6709.

7 hp WISCONSIN engine, $40; 2 hp Briggs & Stratton, $10. Cave, 299-5066.

CARPET, plush-pile Acrilan royal blue, cost $240 last year, asking $120; toys; Road-Race game; basketball hoop; tricycle; airplane, etc. Chandler, 296-3323.

'67 427 cu. in. Ford cylinder heads (complete); '67 Ford power steering assembly; '67 Hurst four speed (Mustang and Cougar). Reif, 265-7264.

AUTO-FLO power humidifier for house up to 2000 sq. ft. Cost $100, sell for $25. Sundberg, 299-2177.

16" SIDEWALK bicycle, convertible boy's or girl's, w/training wheels, needs front tire, $8; 16" tricycle, $6. Rueb, 299-4805.

SEARS SHOTGUNS, 20 ga. auto., 12 ga. pump, both with rib, adjustable choke, recoil pad, $85 and $65 respectively. Hedman, 268-2920.

AKC REGISTERED white miniature poodles, ready Dec. 10. Talbutt, 298-3451.

GOLF CLUBS: Wilson, 3 woods, 7 irons, sand wedge, putter, bag, "Bag Boy" w/seat, $50; sled, $2; boy's 26" bicycle, $5; child's skis, bindings, poles, $5; 21" GE TV, $10. Fulcher, 299-8888.

ELECTRIC STOVE, deluxe model, ceramic finish, $50. Skillern, 298-5150.

TV, SEARS 12", used four months, cost $80, sell for $50. Miller, 255-7716.

CAMP TRAILER, Starcraft, tent type, sleeps four, one year old, 10' x 4'7", 35 cu. ft. storage, $325. Radigan, 299-8345.

GREEN davenport; upholstered gold chair; 30 vol. Americana book (1949). Will deliver in city. Heath, 255-5418.

10" RADIAL arm saw, stand, blades, moulding heads, planer, hole saw, ½" chuck, dados, 110/220v. Shea, 256-9467.

TOY POODLES, silver, 10 weeks old, AKC Registered. Will hold for Christmas. Shipley, 298-2433.

KENMORE gas range, $20; Kenmore portable dishwasher, two years old, $55. Hudson, 298-1328.

HEATHKIT intercoms, $50; pull down wall lamp; light meter; baby buggy; baby scales; formal. Stuart, 265-7315.

ELECTRIC guitar and amplifier, $90; two channel-back chairs, $15 each. Hiller, 296-5059.

COLT single action Army .38 cal., 4 5/8" barrel, $115; .38 two-piece dies, $4; set ivory grips for Colt S.A., $15. Walsh, 298-3173 after 4:30.

WANTED

ROOMMATE for furnished 2-bdr. house, fully carpeted, very nice, reasonable rent, must be clean & neat. Lemmons, 877-2386.

RIDE from general area of 2200 block of Inez NE to Bldg. 800 or 805. Duvall, 299-8744.

.45 COLT new service revolver, 6.5x55 Swedish Mauser, .30-40 Krag, preferably as issued, .45-70 1873 Springfield. Maak, 282-3482.

SIX HOLE 15" Chevy wheel. Baxter, 344-7601.

USED Boy Scouting equipment, camp gear and/or clothing. Wilkins, 268-5971 after 5.

TO JOIN car pool, Comanche NE-San Pedro area. Cowham, 298-4249 after 5:30.

ROCK TUMBLER. Budlong, 256-3206.

PLAYER piano music rolls, all kinds and sizes. Sanders, 299-5761.

MINERALIGHT (fluorescent), mineral, mining, and gem books; also 30-06. Misc. to trade. Aaron, 282-3803.

MINIBIKE or small motorcycle, also belt exerciser for reducing. Chandler, 296-3323.

LOST & FOUND

LOST—Rx safety glasses; Rx sunglasses, w/black frames; key ring w/several keys; single-strand cultured pearls; MIT class ring; rosary beads; wallet. LOST AND FOUND, tel. 264-2757, Bldg. 610.

FOUND—two keys, gold ring with pearls. LOST AND FOUND, tel. 264-2757, Bldg. 610.

SANADO CLUB women are again making festive decorations for the Coronado Club for the holiday season. Working on one of the many individual decorations are, from left, Mrs. T. M. Cowles, assistant coordinator; Mrs. G. E. Horne, Jr., coordinator; and Mrs. Eugene Lazarus, Sanado Club third vice president.

Debutante Ball Dec. 16

Sanado Club Providing Festive Decor At Coronado Club for Holiday Events

Gala Christmas decorations following a theme of "winter magic" in a gold and white color scheme will adorn the Coronado Club during the coming holiday season. An annual project of the Sanado Woman's Club, this year's decorations effort is headed by Mrs. Eugene Lazarus, Sanado third vice president. Mrs. G. E. Horne, Jr., is coordinator assisted by Mrs. T. M. Cowles.

The ballroom ceiling will be covered with hundreds of glittering gold and white prisms radiating from a huge gold star. Gold and white candles and Christmas trees will fill the niches of the fireplace. Background for the stage will be garlands of gold plus golden bells. Hanging chandeliers will replace flower bowls in front of the stage. Focal point for the ballroom will be a large flocked Christmas tree decorated in gold.

The lobby will have a white and gold Christmas tree, garlands of gold, and prisms. Gold chandeliers will hang in front of the mirrored wall.

Figures of "Santa's helpers," identified by very red noses, will be used in the main lounge. Red and green wreaths and garlands will also decorate the main lounge and be repeated in the El Dorado room with other festive touches. The El Dorado lion will undergo a transformation to resemble Santa.

Debutante Ball

Annual Sanado Club Debutante Ball on Saturday, Dec. 16, heads the December calendar of events at the Coronado Club. The formal dinner dance gets underway with a social hour from 6 to 7 p.m. The eight young ladies will be presented at 7 p.m. Steak dinner will be served from 7:30 until 8:30 and dancing will start at 9 p.m.

The Ball, open to all Club members, costs $7.50 per couple. Call Marion Nelson, tel. 265-1072, for reservations.

* * *

Social Hours

As construction work continues at the Club, social hours are being held in the main lounge and lobby area. Tonight, the fun features free snacks from 5 to 7 p.m.

Next Friday, Dec. 8 and again on Dec. 15, the TGIF party will gather in the main lounge.

Ski Club

The Coronado Ski Club will meet Dec. 12 at 7:30 p.m. in the El Dorado room. In addition to the regular business session, Kingsbury Pitcher of the Santa Fe Ski Basin will discuss Santa Fe facilities. Movies on ski technique and stunt skiing will be shown.

* * *

Aquatic Club

During the winter season, the Coronado swim team meets at the Sandia Base Olympic Pool Tuesday, Wednesday, and Thursday each week. The practice sessions concentrate on general conditioning exercises and improving competitive strokes. Children age 6 through 17 are eligible to participate. For additional information, contact Max Newsom (5611), tel. 299-2074, or Frank Duggin (4312), tel. 268-8507.

'Forget the Cards,' Say Sandians; Worthwhile Charity Projects Exist

It was the week before Thanksgiving and already many Sandians were busy making Christmas toys, shopping for gifts, and wrapping presents in colorful paper.

The annual Christmas charity projects were underway throughout the Laboratory For many years, employees have chosen to donate gifts, clothing, money or food to less fortunate families. The cost is roughly the same as the money required to purchase and mail Christmas cards to other Sandians you see every day—and the feeling is more rewarding.

The early activity this year was primarily due to the mid-November deadline for mailing packages overseas. Both Departments 3410 and 3430 decided to send clothing and toys to South Vietnamese children living in villages about 30 miles south of Da Nang. An Albuquerque officer, stationed there with the 1st Marine Division, has offered to distribute the gifts.

That was the reason women in Bldg. 818 were up to their heads in colored yarn during lunch hours (many also worked at home on the project). Some donated money for styrofoam bases, some brought yarn, some braided, still other specialized in adding the felt faces. The result was more than 40 dolls and lambs guaranteed to delight a child of any nationality. Others in the two departments donated clothing and other types of toys.

Additional holiday projects will be reported as information about them is submitted to the LAB NEWS.

CHARMING YARN TOYS, bound for South Vietnamese children, were a Christmas project of women employees in Bldg. 818 (Department 3410). Lucille Smith (3411) supplied the "know-how" which sparked the mass participation.

SPEAKERS for the 8th Annual ASME Symposium on "Concept of Design" took time out to visit Sandia Laboratory. Paul Shannon of Dartmouth College is talking to Mary E. Flanagan (9411-1) at the console of the CDC 3600. Looking on are (l to r) R. S. Wilson (2220), symposium general chairman; Allen Rosenstein, UCLA; Col. C. H. Schilling, U.S. Military Academy; N. W. Harvey and R. H. Lyddane, both General Electric consultants; J. A. Anderson (1514), symposium program chairman; W. C. Scrivner, director of computing 9400; and W. C. McKinley (9411-1).

Sandia Safety Signals

Suffocation

Two University of California students camping in the High Sierra Mountains died of suffocation beneath a heavy plastic cover which they had used as a tent. With the increasing use of plastic tarps as rain shelters, the need for ventilation cannot be over-emphasized.

Holiday Driving

Keep Christmas in your driving by being courteous to other drivers and pedestrians. Alter your plans or route if weather or road conditions make it advisable. Start earlier and give yourself plenty of time to reach your destination.

Traction Tricks

To get going on ice and snow you need traction. Sand, a metal mat or a piece of carpeting under the rear wheels can help. Letting air out of tires does no good, and it increases wear. Extra weight in the trunk helps some, but it increases the possibility of side skids.